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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,503	01/15/2004	Tony D. Flaim	33203	6150

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HOVEY WILLIAMS LLP  
2405 GRAND BLVD., SUITE 400  
KANSAS CITY, MO 64108

EXAMINER

RONESL, VICKEY M

ART UNIT PAPER NUMBER

1714

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/758,503	FLAIM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vickey Ronesi	1714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>08/02/2004</u> .                                                          | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION*****Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1, 5, 11-13, 19, 23, 25, 32, 36 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15, 28, and 40 of U.S. Patent No. 6,740,469 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons given below.

It is noted that instant claims 1, 5, and 11-13 are drawn to a composition, instant claims 19, 23, and 25 are drawn to a "combination" of said composition and a substrate, and instant claims 32, 36, and 38 are drawn to a method of using said composition.

US '469 discloses a composition for use in photolithographic processes comprising a solvent system, an organometallic polymer (with a metal component generic in scope to the presently claimed metal), and an additional polymer binder with -OH functional groups (e.g., epoxy novolac resins, glycourals) (claim 32 of US '469), a "combination" of the composition with a substrate (claim 36 of US '469), and a method of using the composition (claim 38 of US '469).

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Since the recitation “use in photolithographic processes” is merely intended use and does not provide any structural limitations as such, it carries no patentable weight. It is therefore proper to set forth this rejection over US ‘469. See MPEP § 2111.02.

Although US ‘469 discloses a polymer (rather than an oligomer as presently claimed), given that the present claims only require that the number of repeat units,  $n$ , be greater than 2, it is evident that a polymer *per se* is not excluded from the scope of the present claims. This provides further basis to apply an obviousness double-patenting rejection.

Moreover, although the “combination” and method do not explicitly disclose functionalized polymer binder as presently claimed, it is the examiner’s position that such is understood since the combination and method of using claims utilize the claimed composition (which does include a functionalized polymer binder). In addition, the composition disclosed in the “combination” and method claims include open claim language “comprising,” allowing for the addition of functionalized polymer binder.

In light of the above, present claims are rendered obvious over US ‘469.

2. Claims 1-3, 5, 6, and 10-13 are directed to an invention not patentably distinct from claims 1-6 and 12-15 of commonly assigned U.S. Patent No. 6,740,469 B2. Specifically, see the rejection set forth in paragraph 1 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302).

Commonly assigned U.S. Patent No. 6,740,469 B2, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly

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owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

3. Claims 1-3, 5, 6, and 10-13 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 6,740,469 B2. See the rejection set forth in paragraph 1 above.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the

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claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 15, 27, and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are unclear because they recite a group of polymers or oligomers; however, glycerol ethoxylate, pentaerythritol ethoxylate, and pentaerythritol propoxylate are not polymers or oligomers.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 11-13, 19-23, 25, 32-36, 38, 48, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al (JP 09-031385).

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Pending a full English-language translation of Inoue et al, in setting forth this rejection, a machine translation has been relied upon.

Inoue et al discloses a solvent-based printing ink composition and a method of making and using said ink for a plastic film substrate comprising a hydroxylic resin such as a polyamide or a cellulosic resin (i.e., an organic polymer comprising a functional group such as -OH that is attached to said polymer backbone, pendantly attached or attached via a linking group intermediate), an organic solvent, and a crosslinking agent which is a titanium polymer with acyl functional groups (abstract, claims 1-2). The titanium polymer in equation 2 corresponds to the presently claimed oligomer and has from 2 to 10 titanium atoms in the molecule (paragraph 0007). It is noted that although Inoue does not disclose the  $M_w$  of its hydroxylic resin, it is inherent that the polymer  $M_w$  is greater than the presently claimed "at least about 150 g/mol" since  $M_w$  recited in the claims also includes oligomer  $M_w$  and polymer  $M_w$  is typically greater than oligomer  $M_w$ . It is noted that the presently recited intended use "for forming solid-state device structures" is not given patentable weight since case law holds that "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation." See *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) and MPEP § 2111.02.

In light of the above, it is clear that Inoue et al anticipates the presently cited claims.

6. Claims 1-4, 10-13, 15-22, 25, 27-35, 38, and 40-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Nanao et al (EP 0126 638).

Nanao et al discloses a transparent thin film composition and a process of making said composition for a substrate such as various kinds of sensor and materials for optical devices

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(page 5, lines 24-25) comprising a solvent, an organometal compound such as an oligomer (i.e., a polymer molecule consisting of only a few monomer units, i.e., overlaps presently claimed  $n = 3-10$ ) from a metal alkoxide (based on metals from Groups 3-5 and 13-15 such as those listed on page 3, lines 1-5) (page 3, lines 6-7), and a polymer material, e.g., polyethylene glycol, polyvinyl acetate, polyvinyl alcohol, polyacrylic acid, etc. (i.e., an organic polymer comprising a functional group such as -OH that is attached to said polymer backbone, pendantly attached or attached via a linking group intermediate) (page 4, lines 5-11) (abstract, claims 1-3). In one embodiment, the polymer material used is a polyvinyl alcohol having an average polymerization degree of about 2,000, i.e., 88,000 g/mol (i.e.,  $> 150$  g/mol) (example 1).

With respect to the process, the order of mixing the composition is not limited (i.e., the dispersing step can comprise of the organometal compound and polymer material being dispersed together or separately into the solvent) (page 4, line 34-35). The method preferably may also comprise the reaction product of a metal alkoxide and a metal chelate which aids in stability and solubility (page 3, lines 24-26). To form the coating, in one embodiment, the composition is heated at a rate of  $1^{\circ}\text{C min}^{-1}$  to  $600^{\circ}\text{C}$  and maintained at  $600^{\circ}\text{C}$  for one hour (i.e., overlaps presently claimed at least at about  $150^{\circ}\text{C}$  for at least 3 minutes and also less than  $130^{\circ}\text{C}$  for about 1-10 minutes) (Example 1). A final ceramic thin film made from said composition is not more than  $100\mu\text{m}$  thick (i.e., overlaps presently claimed about  $0.5\mu\text{m}$  thick and  $>1\mu\text{m}$ ) (page 1, line 31) and has a metal content not less than 5 wt % (i.e., overlaps presently claimed 25 to 80 wt %) (claim 1).

Since Nanao et al meets the claimed limitations, it is inherent that it exhibits the presently claimed properties of refractive index at 633 nm wavelength and percent transmittance and is



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free of cracks under 200× magnification.

In light of the above, it is clear that Nanao et al anticipates the presently cited claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5-9, 14, 23-24, 26, 36-37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanao et al (EP 0 12 638), as applied to claims 1-4, 10-13, 15-22, 25, 27-35, 38, and 40-51 above, in view of Flaim et al (US 6,303,270).

Nanao et al does not disclose the presently claimed substituents on its metal alkoxide oligomer; however, it does not teach away from such substituents and is open to any organometal compound that can be rapidly thermally decomposed to give an inorganic compound after baking and does not contain carbon that would prevent the decomposition reaction and deteriorate the characteristics of the product (page 2, lines 19-24). Flaim et al uses an organotitanium polymer derived from a poly(alkyltitanate) and a variety of compounds listed on col. 3, lines 54-63 that is baked at temperatures ranging from about 150 to 300°C for about 15 to 60 minutes to decompose organic components and leave an inorganic layer (claim 37). In particular, Flaim et al discloses a photoresist composition comprising an organotitanium polymer derived from poly(n-butyltitanate) (i.e., a genus of poly(dibutyltitanate)) and 2-methacryloethyl acetoacetate (i.e., a species of ethyl acetoacetate) (Figure 1).

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Although the Nanao et al in view of Flaim et al does not explicitly disclose the use of functional groups on the polymer that has a chelating moiety as presently claimed in claims 14, 26, and 39, nevertheless, such is implicitly disclosed since the excess acetoacetate used in Flaim et al can react with the alcohol groups on the polymer and thereby form acetoacetic ester functional groups.

Given that Nanao et al is open to any metal alkoxide oligomer that rapidly thermally decomposes and given that Flaim et al teaches that an organotitanium polymer containing the presently claimed substituents rapidly thermally decomposes, it would have been obvious to one of ordinary skill in the art to utilize Flaim et al's organotitanium polymer in Nanao et al and thereby arrive at the presently claimed invention.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vickey Ronesi  
September 15, 2004

*Vasu Jagannathan*  
VASU JAGANNATHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700